

## Road to Cleaner Energy

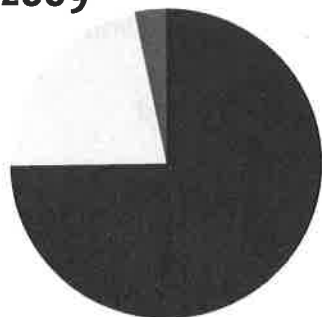
### Building on the success of PA 295



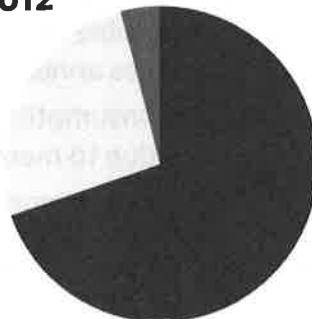
James Clift  
Sarah Mulkoff  
March 18, 2014

## Changing portfolio

2009

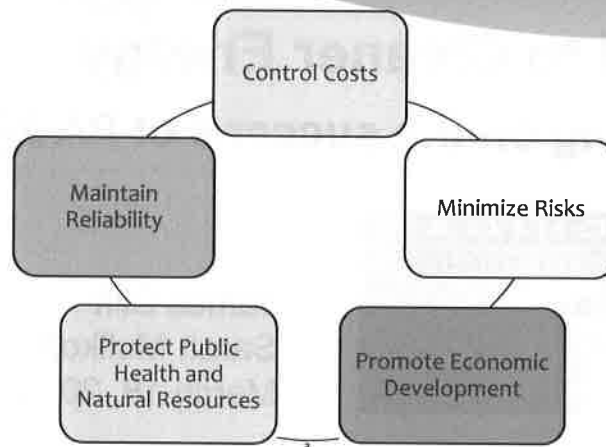


2012



■ coal  
■ natural gas  
■ nuclear  
■ renewables

## Michigan Energy Plan - Goals



## Protecting Public Health

- \* 2009 study that demonstrated nine oldest coal plants responsible for over \$1.5 billion health care costs and damages annually.
- \* Fish consumption advisory on all Michigan inland lakes due to mercury contamination.
- \* One in Six women of childbearing age, already have mercury levels which exceed EPA safe levels

## Hidden Costs of Coal

-more than \$2 billion/year



HEALTH IMPACT	NUMBER OF CASES
Premature mortality	660
Cardiovascular hospital admissions	150
Respiratory hospital admissions	210
Chronic bronchitis	280
Asthma emergency room visits	450
Asthma exacerbations	250,000
Minor restricted activity days	260,000

Source: "Public Health Impacts of Old Coal-Fired Power Plants in Michigan", Environmental Health and Engineering, Inc. 2011.

## Controlling Costs

- \* Costs of renewable energy has dropped to below \$50/Mwh
- \* Less than the average costs on all existing non-renewable energy averaged together
- \* Elimination of production tax credit will result in increase – not clear how much of an impact
- \* Public health impacts vary by source

## Minimizing risks

- \* Renewable power provides long-term stable prices for power – will not fluctuate based on fuel costs
- \* Smaller incremental projects reduce the risk that we will overbuild and be left with stranded assets
- \* Diverse resource mix reduces chance of power disruption
- \* Help reduce the risks associated with climate change

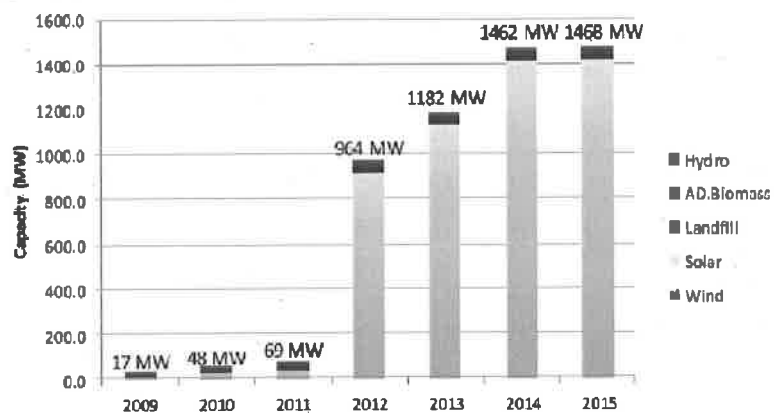
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## Promoting economic development

- \* Over \$2 billion in new investment in Michigan since 2008
- \* Spreads tax benefits of utility infrastructure across more communities
- \* Royalty payments provide income to Michigan residents which recirculate it into local economies
- \* Manufacturing innovation benefits for other industries

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**Figure 5: Cumulative Renewable Energy Capacity by Commercial Operation Date**



Source: Report on the Implementation of the P.A. 295 Renewable Energy Standards and the Cost-Effectiveness of the Energy Standards, February 14, 2014.

## Tale of two utilities

- \* Consumers Energy has announced retirement of around 1000 MW of old coal capacity. New purchase of a plant in Jackson still leaves them about 500 MW short.
- \* Detroit Edison is still 75% reliant on coal, much of it older and dirty. Much of it is marginal capacity used less than 50% of the time. New renewables and natural gas should be replacing a significant portion of their fleet.

## Renewable Energy

Goals	Renewable Energy
Control Costs	Cost at or below existing non-renewable resources
Minimize Risk	Long-term stable price contracts available
Promote Economic Development	Uses more Michigan made goods and workers
Protect Public Health	Reduces public health impacts of electricity production
Preserve Reliability	No impacts when mixed with complimentary resources

## Contact Info



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